AUTHOR INDEX

Abe, Shigeo, 981 Abou Akkada, A. R., 1475 Abrahamsson, Kerstin, 1695 Adams, Richard, 1570 Addison, Betty V., 184, 1761 Adler, H. E., 558 Ahearn, D. G., 1370 Akers, Ronald L., 1086 Akers, T. G., 1257, 1811 Albizo, Johnnie M., 649, 1114 Alexander, M., 636, 1093 Allen, J. E., 487 Allerhand, Jona, 315 Allgeier, Daniel L., 848 Altieri, Patricia L., 1779 Amerine, Maynard A., 1067 Amezcua, Jacqueline, 509 Amin, V. M., 267 Ammann, Elizabeth C. B., 669, 822 Amsterdam, Daniel, 1460, 1528 Anderson, A. W., 207 Anderson, B. T., 932 Anderson, G. W., 193 Anderson, Lawrence C., 609 Anderson, R. E., 1629 Ando, Kunio, 965 Anellis, Abe, 1300 Angelotti, Robert, 673, 735 Antoš, K., 582 Applestein, Jeffrey M., 1006 Arima, Kei, 965, 1727 Armour, V., 1575 Arnett, G., 1489 Arveson, Judith S., 433 Ashton, D. H., 628 Attebery, H. R., 1795 Auernheimer, A. H., 1859 Auletta, Angela E., 691, 1624

Babel, F. J., 617 Backus, E. J., 1134 Bailey, E. G., 912 Baillod, Charles R., 62 Baker, Carolyn N., 184 Baldwin, Beverly B., 301 Baldock, James D., 1627 Baldwin, Ruth E., 1929 Ball, Robert J., 1451 Baltz, B. H., 1011 Barbeito, Manuel S., 291, 490, 1225 Barkate, John A., 1872 Barnick, J. A., 1865 Barrett, James T., 1137 Barroso, C. Vanacôr, 1942 Bartholomew, J. W., 1269 Bartley, E. E., 1475

Basch, Harold I., 603, 1953

Ayres, John C., 1, 21, 1945

Bauchop, T., 961 Baughman, Richard H., 1076 Baxter, E. H., 528 Beakley, John W., 1478, 1935 Beardmore, W. B., 362, 563, 1699 Beck, Raymond W., 1543 Beernink, K. D., 1418 Beisel, W. R., 187 Bell, Stanley C., 1611 Bell, T. A., 1029 Bennett, John V., 1056 Benton, William H., 1952 Berberich, Norbert J., Jr., 1457 Berg, Björn, 1424 Berky, John J., 793 Berman, Sanford, 1779 Bernsteinas, Julius B., 1794 Berquist, Kenneth R., 182, 703 Berry, R. J., 1156 Berryhill, David L., 958 Berube, R., 1475 Beuchat, L. R., 772 Bhat, Maya G., 528 Bickham, Susan T., 1748 Biggie, R. A., 1939 Bils, R. F., 1269 Björklund, Marianne, 69 Black, L. A., 917 Blazevic, Donna J., 668 Bloomer, J. L., 538, 1426 Blumer, Sharon, 1907 Bodily, H. L., 102 Bohrer, C. W., 308 Boon, B., 1465 Boone, Clarence J., 279 Boone, James S., 1761 Borders, D. B., 614 Borg, A. F., 1029 Bornside, George H., 1507 Borowski, Paul T., 620 Bose, Sushil K., 340, 749, 1429 Botard, Robert W., 689 Bottone, Edward, 315 Bouillet, A., 154 Bourgeois, Louis D., 1606 Boyle, Frank P., 759 Boyle, W. C., 62 Bradshaw, J. G., 998 Branson, Dorothy, 256, 906 Brashear, D. A., 1865 Braun, John L., 174 Braun, Peter, 1684 Brenner, Q. M., 569 Brewer, John H., 848 Brian, Buford L., 549 Browder, Henry P., 1168, 1174 Brown, Joseph P., 805 Brown, Olen R., 260, 476 Bruce, Judith L., 1663

Bruch, Mary K., 1427, 1841 Bryan, Frank L., 1 Buchanan, Lee M., 1120, 1240 Bühlmann, Xaver, 1919 Bulger, Roger J., 890 Bullerman, Lloyd B., 1945 Bump, Charles M., 1503 Burnett, J. Paul, 1245 Busta, F. F., 424, 628 Butler, Thomas F., 735 Button, D. K., 530

Cabasso, V. J., 1613 Caltrider, P. G., 1011, 1913 Camp, Helen M., 1056 Campbell, Jeptha E., 735 Campbell, Michael F., 1949 Campbell, T. Colin, 819 Capek, A., 1258 Carey, P. F., 1865 Carlson, R. V., 795 Caruso, J. G. B., 1807 Casey, Helen L., 160 Cassidy, W. E., 1629 Cauffman, Hughes, 950 Cazin, J., Jr., 487 Centifanto, Ysolina M., 827 Cephus, Marjorie L., 932 Cerini, C. P., 1613 Chai, T., 1738 Chakravarti, Ashima, 620 Chan, James C., 1625 Chappelle, E. W., 954 Chen, C., 1738 Chian, S. K., 1337 Chibata, Ichiro, 1200 Chipley, J. R., 445 Chou, T. W., 138 Christian, J. H. B., 1853 Christiansen, Lee N., 133 Ciccarelli, Alberto S., 732 Ciegler, A., 665, 1678 Cimijotti, E. B., 1414 Claesen, M., 1557 Clark, Carol W., 1764 Clark, Mary E., 355 Clark, T. D., 362, 563 Cliver, Dean O., 595, 1564 Cloninger, Marion, 1929 Cobet, A. B., 1257 Coblentz, W. S., 138 Cody, R. M., 1947 Cogan, T. M., 1215, 1220 Cohen, Jay O., 122 Cohen, Judith G., 1431 Cohen, Richard L., 1655 Collins, Joel A., 799 Colmer, Arthur R., 1875

Colwell, R. R., 944, 1024 Comfort, R. B., 1255 Cook, A. M., 1156 Cook, Elizabeth A., 1831 Cook, Elton S., 815, 1457 Cook, Judy Ann, 1420 Cook, Reginald O., 762 Cooney, J. J., 426, 569 Cordaro, Joseph T., 168 Cordon, Theone C., 48 Coriell, Lewis L., 1895 Craig, James M., 553 Crawley, G. J., 187 Crockett, P., 430 Crosby, E. Brown, 1006 Crosby, Wayne H., 963 Cross, William R., 1420, 1802 Crum, M. G., 1826 Culbert, Kathleen H., 1002

Dahlgren, C. M., 1120 DaMassa, A. J., 558 Darby, Richard T., 900 Das, S., 1799 Davis, C. L., 500 Davis, Norman D., 158 Day, L. E., 1913 Deasy, P. B., 810 Decker, H. M., 1120 De Clercq, E., 1314 Deffner, Janet, 133 de Guzman, Anselma, 948 Dehority, B. A., 781 de Martínez Segovia, Z. M., 1602 de Matos, C. Zaccaro, 1942 DeMeio, Joseph L., 1207 Denny, C. B., 308 De Somer, P., 1314 DeWeese, Martha S., 1713 Dhar, Amiya K., 340, 749, 1429 Dias, F. F., 276, 1191, 1364 Díaz, Alberto, 1602 Dice, J. R., 1489 Dickerson, R. W., Jr., 991, 998 Diener, Urban L., 158 Dietz, Alma, 935, 1813 Dimmick, R. L., 1081 Dixon, Glen J., 370, 1489 Doctor, V. M., 1723 Doi, Osamu, 1276, 1282 Dolan, Timothy M., 1331 Dollar, Alexander M., 232 Dondero, Norman C., 276, 1191, 1364 Donnelly, C. B., 917 Donovick, Richard, 10, 603 Dorsey, Warren G., 166 Dorward, W. J., 1235 Doubek, Joseph R., 925 Doupnik, Ben, Jr., 1596 Douros, John D., Jr., 320, 532 Doyle, John E., 1742 Drobnica, L., 582 Dubois, Normand R., 1098

Duma, Richard J., 1261 Duncan, Charles L., 82, 401, 406, 412 Durham, Norman N., 439 Durichek, John E., Jr., 822 Dwyer, A. C., 1245 Dyer, John K., 207

Edmonds, Paul, 426, 569 Edwards, Fitzrov F., 349, 896 Ehrlich, H. L., 197, 695 Eickhoff, Theodore M., 1056 Eisler, William J., Jr., 1375, 1381 Elander, Richard P., 753 Elkan, Gerald H., 155 Eller, Charles, 349, 896 Elliker, P. R., 56 Ellis, Lillian N., 1831 Ellner, Paul D., 1892 Emerson, J. A., 242 Emslie-Smith, A. H., 1468 Endo, H., 1809 Ernst, Robert R., 1742 Esdale, W. J., 680 Etchells, J. L., 1029 Evans, James B., 519

Faber, John E., 1655 Fabiyi, A., 430 Facklam, Richard R., 1822 Faine, S., 534 Falanghe, H., 1807 Farber, Jane F., 1102 Favero, Martin S., 182, 480 Fenters, James D., 1076, 1331 Fiala, Milan, 1445 Fields, M. L., 948, 960, 1929 Fina, L. R., 1475 Finegold, S. M., 1795 Finland, Maxwell, 877, 1288. 1684, 1706, 1753 Finstein, M. S., 1191, 1646 Fitzgerald, Thomas, 1512 Fletcher, J. T., 1309 Folger, David, 812 Ford, J. W. S., 296 Fordyce, Patricia A., 1331 Formal, Samuel B., 1779 Foster, E. M., 133, 401, 406, 412 Fox, Kenneth, 343 Fraher, Margaret A., 311 Frankenfeld, John W., 320, 532 Fraser-Smith, Antony C., 669 Friedman, Herman, 223 Frisque, D. E., 1120 Fritts, Suzanne P., 703 Fuccillo, D. A., 430 Fujita, Teruyuki, 212 Fukada, T., 1809 Fulghum, Robert S., 301 Fulginiti, Vincent A., 1265 Fuller, Vernon J., 458

Fung, Daniel Y. C., 1036, 1608, 1627 Furuya, Akira, 981

Gadebusch, Hans H., 817, 1625, Gambill, Vernon M., 1240 Gardner, Earl W., 549 Gaudy, A. F., Jr., 1352, 1358 Gaudy, Elizabeth T., 1358 Gaush, Charles R., 588 Gerencser, Mary Ann, 1713 Gerichter, C. B., 1708 Gerstein, Deborah A., 877, 1288 Gilardi, Gerald L., 33, 1497 Gilbert, R. J., 535 Gilden, Raymond V., 1015 Gilliland, S. E., 1215, 1220 Giménez, Domingo F., 732 Gitnick, Gary L., 430, 691 Glantz, Paul J., 417, 435 Glathe, H., 170 Goel, K. C., 1352, 1358 Goepfert, J. M., 862, 1939 Goldschmidt, Millicent C., 871 Göransson, Bo. 1424 Gordee, Robert S., 1610 Gordon, D. F., Jr., 428 Gordon, Francis B., 1551 Gorman, Marvin, 753 Goss, William A., 1414 Graham, John L., 177 Greaves, H., 1599 Green, John H., 1794 Green, Louis H., 78 Green, Gareth M., 78 Greiff, Donald, 835 Gremillion, Gardner G., 291 Griffith, Lewis, J., 656 Grobgebauer, Klaus, 1745 Groffinger, Albert, 1779 Groomes, Ralph J., 147 Gruft, Howard, 355 Grundy, Walton E., 1611 Guadagni, D. G., 759 Gunnison, Janet B., 311

Hagen, C. A., 932 Hahon, Nicholas, 263 Hall, Mark R., 1431 Hamill, Robert H., 753 Hamilton, Pat B., 1719 Hammer, James L., 1326 Han, Y. W., 1140 Handelman, Beverly, 423 Hanlin, Richard T., 819 Harda, Tokuya, 1439 Hare, T. A., 496 Harries, Diann, 335, 1394 Harrill, Joan C., 1454 Harrington, Brian J., 106 Harrington, J. A., 1245 Harris, B. S. H., 1719 Harris, N. D., 239

Harris. R. F., 330 Harris, Virginia G., 1584 Harrison, Edward F., 1174 Harrison, J., 797 Harrison, Janice M., 1937 Hartman, Paul A., 151, 958 Hartwell, W. V., 1859 Hatch, M. T., 1811 Hauschild, A. H. W., 1235 Hausmann, W. K., 614 Hawrylewicz, E. J., 932 Haves, A. Wallace, 819, 1163 Hayes, Jean A., 1134 Hayes, Sidney, 553 Hebeka, E. K., 563, 1699 Heberling, Richard L., 1015 Heckly, Robert J., 1081 Hedrick, H. G., 1826 Heilman, W. R., 308 Hein, Hugo, Jr., 988 Hendricks, D., 1475 Herrero, Mario M., 792 Herrmann, Ernest C., Jr., 1151 Herrmann, John E., 595, 1564 Hilker, J. S., 308 Himmelfarb, P., 1437 Hobbs, Betty C., 535 Hodoval, L. F., 187 Hoehn, Marvin M., 1132 Hoffman, Robert K., 641, 787, 1110, 1240, 1782 Hofsten, Bengt v., 1424 Holmes, Beverly, 56 Holmström, Björn, 73 Holper, Jacob C., 1076, 1331 Horie, So, 1200 Horton, Charles L., 506 Hoshino, M., 1809 Howard, Mary, 1019 Howe, Michael L., 1137 Huang, Kun-Yen, 1551 Huber, F. M., 1011, 1913 Huebner, Robert J., 1015 Huggett, David O., 260, 476 Hughes, L. W., 1935 Huhtanen, C. N., 470 Hungate, R. E., 1044 Hunt, Dale E., 867, 1792, 1879 Hunter, J. H. 1053 Huygelen, C., 154

Ichishima, Eiji, 845 Idziak, Edmund S., 1061 Ifkovits, R. W., 1406 Ikawa, Miyoshi, 620 Ikedo, Katsuhiko, 973 Incze, Kalman, 1061 Indahl, Sidsel R., 667 Iwasaki, Shinjiro, 1727

Jaeger, Robert F., 177 Jambor, William P. 817 Jannasch, Holger W., 1616 Jarvis, B. D. W., 714, 1044 Jawetz, Ernest, 311, 645 Jeffries, Charles D., 1431 Jenner, P. C., 1251 John, T. Jacob, 1265 Johnson, D. E., 1678 Johnson, David L., 1422 Johnson, Herbert W., 203 Johnson, LeRoy E., 1813 Johnson, Marvin J., 1886 Johnson, Roy M., 708 Johnson, Russell C., 1584 Johnson, Warren D., 1006 Johnston, J. R. 164 Jones, K. V., 362, 563 Jones, Lois M., 1179 Jones, Lynwood A., Jr., 787 Jones, M. B., 39 Jong, B. B., 428 Jönsson, Arne G., 450 Julius, F., 1475

Kalter, S. S., 1575 Kannan, Mickael M., 1663 Kaplan, Arthur M., 900 Katarski, Mary E., 708 Kato, Jyoji, 1200 Katz, Moshe, 419 Kaufman, Leo, 271, 1907 Kavanagh, Frederick, 777 Kaye, Donald, 1006 Kazanas, Nuria, 128, 242 Keele, Bernard B., 155 Keenan, T. W., 1881 Kelley, Donald C., 689 Kendall, Margaret, 535 Kenis, Paul R., 1253 Kenny, Michael T., 1146 Kerbaugh, Mildred A., 519 Kern, Jerome, 1015 Kerur, L., 1723 King, L., 961 King, Sylvia, 577, 579 Kinoshita, Shukuo, 981 Kissling, R. E., 160 Kisumi, Masahiko, 1200 Klein, Donald A., 421 Klein, Frederick, 855 Klein, George C., 184, 1761 Knott, Allen R., 1019 Koburger, J. A., 1776 Kodama, Kenjiro, 965 Koelz, Byron S., 881 Kolb, Robert W., 458 Komatsubara, Saburo, 1200 Kozová, Jaroslava, 29 Kraft, Allen A., 1, 1036, 1608 Kreider, John W., 539, 1804 Kresheck, G. C., 13 Kristián, P., 582 Kundsin, Ruth B., 143 Kundu, A. K., 1799 Kunkee, Ralph E., 572, 1067

Kuntscher, H., 1924

Kunz, Lawrence J., 1261, 1503 Küster, E., 810

Ladanyi, P. A., 463 Lane, A. G., 1211, 1400 Langlois, B. E., 799 Langmaack, Heike, 1745 Laumann, David, 223 Lawrence, James V., 176 Lechowich, R. V., 772 Lechtman, Max D., 1269 Lee, J. S., 1320, 1937 Leifson, Einar, 1633 Leslie, J. E., 917 Lethbridge, J. H., 1483 Levin, R. E., 1734, 1738 Lhoest, W., 1465 Lighthart, Bruce, 1797 Lin, Chau-Ching, 45 Lin, Dar-Kuan, 45 Lincoln, Ralph E., 841, 855 Linsley, James G., 609 Liu, O. C., 1865 Lobben, J. C., 1320 Loder, P. Bronwen, 877, 1288 Loken, K. I., 1002 Longhurst, W. M., 39 Longyear, V. M. C., 296 Lorenz, P. R., 1539 Lorian, Victor, 1288 Love, L. L., 285 Lovelace, T. E., 944 Lowenthal, Joseph P., 1779 Lucas, G. B., 851, 1309 Lumpkins, Earl D., 433 Lynch, D. L., 13

Mabe, James A., 753 McClintock, Mary, 797 McClure, Bill M., 793 McCulloch, William F., 174 McDade, Joseph J., 1086 McDaniel, L. E., 912 McGarrity, Gerard J., 1895 Mackey, Jesse K., Jr., 1543 McLean, I. W., Jr., 1489 Mah, Robert A., 358 Maier, Siegfried, 176, 963 Maier, Walter J., 1095 Majumdar, S. K., 1786 Malekzadeh, L. F., 663 Mandal, Amalendu, 1786 Mann, Jerry M., 1343 Manna, S., 1799 Markovetz, A. J., 487 Marlowe, Mary L., 1624 Marquis, George S., Jr., 1076 Marr, A. G. M., 528 Marshall, James H., 480 Marth, E. H., 862 Martin, Margaret E., 506 Martvon, A., 582 Maryanski, James H., 735 Mashni, Charles I., 178

Massell. Benedict F., 509 Mateles, R. I., 1337 Mathews, James, 1640 Mathews, John, 935 Matthews, Thomas R., 1610 Maurer, Elmer W., 48 Mautz, Marilyn, 1024 May, K. N., 445 Mayhew, Charles J., 263 Means, Ura Mae, 203 Medrek, Theodore F., 1524 Mehrhof, William H., 1742 Merek, Edward L., 724 Merz, G. S., 1179 Metzger, William I., 577, 579 Meyer, R. M., 1475 Meyers, Edward, 10, 603 Meyers, S. P., 1370 Michael, J. Gabriel, 509 Michener, H. David, 759 Midura, T., 102 Miller, F. A., 1489 Miller, G., 1100 Miraglia, Gennaro J., 603 Mirocha, C. J., 797 Misaki, Akira, 1439 Mislivec, Philip B., 1053 Mitruka, B. M., 636, 1093 Miwa, Shoichi, 1806 Miyamoto, Mitsuko, 1282 Mizrahi, A., 1100 Modi, V. V., 172 Moody, Max D., 184, 1761, 1822 Moore, George E., 163 Morck, R. A., 1629 Moreland, Elizabeth J., 185 Morris, E. L., 187 Morris, M. E., 1935 Morrison, S. M., 463 Motai, Hiroshi, 845 Moyer, James E., 1790 Mukkada, Antony J., 815, 1457 Mullican, Charles L., 1110 Mullins, C. G., 656 Mundt, J. Orvin, 1326 Murphy, F. A., 437 Mutai, M., 1809

Nader, C. J., 1124 Nagle, Stanley C., Jr., 53 Nagy, Julius G., 441 Nakamura, Lawrence K., 216 Nakamura, Mitsuru, 1420, 1619, 1802 Natarajan, K. V., 366 Nekola, M., 1924 Nelson, G. E. N., 1678 Nelson, John D., 1570 Nelson, R. R., 1719 Nemec, P., 582 Nichols, Agnes A., 797 Nichols, R. A., 1370 Nielson, Kathleen, 890 Niilo, L., 1235

Noller, Eric C., 439 Norcross, N. L., 1093 Northway, William H., 1418 Notter, George K., 759 Nunez, William J., 1875 Nuñez-Ponzoa, M. V., 48 Nunomura, Kazuko, 212 Nutini, Leo G., 815, 1457 Nutt, Donald A., 1606 Nygaard, G. S., 102

Oden, Edwin M., 624 Ogura, Michiko, 1276 Oh, Hi Kon, 39 Ohta, Yoshiyuki, 973, 1293 Okrend, Harold, 276, 1364 Oleniacz, Walter S., 90, 1598 Olitzki, A. L., 500 Olitzky, I., 1635 Olitzki, Z., 500 Olson, N. F., 267, 862 Onishi, Hiroshi, 1847 Ordal, Z. John, 524, 1764, 1949 Orillo, C. A., 1669 Ornellas, E. P., 1418 Osterhout, Mary, 355 Oswalt, F. W., 1935 Oterholm, Anders, 524 Ottow, J. C. G., 170 Ough, C. S., 572 Oxborrow, Gordon S., 480 Oyama, Vance I., 724

Pace, Paul J., 673 Pacha, R. E., 97, 795, 1901 Painceira, Maria T., 792 Pal, N., 1799 Palmer, E. L., 160, 437 Pansy, Felix, E., 603, 817 Parker, Elliot T., 1794 Parker, G. F., 1251 Parmentier, G., 1557 Patel, P. V., 164 Patel, R. N., 172 Pathak, S. G., 1941 Patrick, William C., 166 Pattee, Peter A., 151, 958 Patterson, E. L., 614 Patterson, G., 1695 Pearce, G. W., 1859 Pederson, C. S., 1669 Pedersen, M. M., 1591, 1631 Peeler, James T., 735, 998 Peetermans, J., 154 Pelcher, Elizabeth A., 311 Perlman, D., 1258 Peterson, R. E., 665 Pettit, Robert E., 1230 Petty, Milton A., 1285 Pfister, Robert M., 812 Pflug, I. J., 343 Phillips, Charles R., 787, 1120 Picciolo, G. L., 954 Pickett, M. J., 1591, 1631

Pidcoe, Vern, 271 Pierce, Alan K., 540 Pilcher, K. S., 553 Pindak, Frank F., 468, 1040 Pine, Leo, 122, 279 Pisano, Michael A., 90, 1598 Pitt, J. I., 1853 Pittillo, Robert F., 867, 1792, 1879 Pohland, F. G., 1518 Polakavetz, Sandra, 423 Pomeroy, B. S., 1002 Porter, Sook, 1901 Portner, Dorothy M., 1782 Post, F. J., 138 Powers, Edmund M., 180 Pugh, Charles T., 1132 Puleo, John R., 480

Rafajko, Robert R., 423, 803 Ragheb, H. S., 1255, 1406 Rao, S. Sathyanarayana, 942 Ramankutty, M., 29 Ramirez, Manuel J., 1548 Raper, Kenneth B., 106 Read, R. B., Jr., 746, 991, 998 Reca, Maria E., 236 Reed, Lawrence L., 822 Reese, E. T., 419 Řeháček, Z., 29 Reyes, A. L., 746 Rheins, Melvin A., 1343 Rich, E., Jr., 954 Richardson, H., 1468 Richards, J. P., 239 Riemann, Hans, 1621 Rightsel, Wilton A., 835, 1489 Rippon, John W., 114 Ritter, Hilda, 25 Robinson, Harry J., 228 Rodriquez, A. R., 1575 Roelants, P., 1465 Rogosa, M., 285 Romano, Antonio H., 178 Rosemberg, J. A., 1942 Rosen, A., 1738 Rosen, Aaron A., 178 Riemann, H., 1695 Rotman, Yigal, 960 Rufener, W. H., Jr., 1955 Russell, A. D., 335, 1394

Sabath, Leon D., 877, 1288 Sabel, Fred L., 1086, 1146 Safferman, Robert S., 178 Salunkhe, D. K., 138 Sandine, W. E., 56 Sanford, Jay P., 540 Sardinas, Joseph L., 248 Sargeant, K., 296, 1483 Satter, L. D., 680 Savage, George R., 793 Sayer, P. D., 326 Schabel, Frank M., Jr., 370, 1489 Schafer, W. J., 1629 Scharer, Jeno M., 855 Schelhart, Dorothy, 1383, 1387 Scheline, Ronald R., 667 Schiller, I., 1924 Schmidt, Bernard, 1745 Schmidt, C. F., 1105 Schmidt, Jerome P., 468, 1451 Schmidt, R. R., 496 Schneider, Morris D., 1422 Schroeder, Harry W., 946, 988 Schubert, Joseph H., 1748 Schulze, Judith A., 1619 Scooter, K. V., 1483 Scott, A., 1437 Sechter, I., 1708 Segner, W. P., 1105 Sehgal, S. N., 393 Seiders, Reginald W., 490 Seligmann, Edward B., Jr., 1102 Sellers, Sara M., 370 Sellers, Walter, 168 Senior, B. W., 1468 Seraichekas, H. R., 1879 Sever, John L., 430, 691 Shadomy, Smith, 1663 Sheffner, A. Leonard, 506 Shefner, Alan M., 1422 Shelton, L. Robert, Jr., 147 Shieh, T. R., 1348 Shirey, William N., 166 Shirota, M., 1809 Sidwell, Robert W., 370 Sierra, Gonzalo, 801 Silverberg, Robert G., 260 Silverman, Sidney J., 1019 Siner, Myron, 509 Singh, Kartar, 393 Sinski, James T., 659 Slack, John M., 1713 Smiley, Karl L., 216 Smith, Charles B., 1753 Smith, Dorothy A., 10, 603 Smith, Frederick W., 1427, 1841 Smith, Jerry W., 963 Smith, R. L., 1454 Smith, Rodney F., 1434 Smith, Thomas F., 588 Snell, Neva, 436 Snodgrass, Charlotte J., 1776 Snyder, Marshall L., 1417 Sobers, E. K., 1596 Solari, Arturo A., 792 Solee, R. E., 1002 Solomon, James D., 506 Sommers, L. E., 330 Somkuti, G. A., 617 Sonne, Minetta, 645 Southern, Paul M., Jr., 540 Speck, M. L., 424, 1215, 1220

Spector, Sheldon L., 1770

Splittstoesser, D. F., 1024 Srinivasan, V. R., 1140 Staat, Robert H., 1478 Stahly, Donald P., 1605 Stamer, J. R., 536 Steward, John P., 1418 Stirton, A. J., 48 Stoyla, B. O., 536 Street, Vera W., 881 Strong, Dorothy H., 82 Sugiyama, H., 133 Summers, A. O., 1245 Surgalla, Michael J., 649, 1114 Surkiewicz, Bernard F., 147 Sussman, Carol, 358 Suter, Loyal S., 881 Sutter, Vera L., 1532 Suzuki, Toshiyuki, 1847 Swartz, Jacob H., 1524

Taber, Ruth Ann, 1230 Taclindo, C., Jr., 102 Takeda, Isao, 1806 Tamura, Gakuzo, 965, 1727 Tan, P. L., 308 Tanaka, Kinji, 1457 Tanaka, Nobuo, 1276, 1282 Taub, Frieda B., 232 Tauraso, Nicola M., 1770 Tavormina, Peter A., 1168, 1174 Taylor, Larry A., 490, 1225 Taylor, Welton I., 1383, 1387 Tengerdy, Robert P., 441 Thiele, Elizabeth H., 228 Thomas, John P., 25 Thwaites, William M., 956 Tierno, Philip M., Jr., 1259 Tilles, Jeremiah G., 1706 Tillotson, James R., 1684 Timoney, R. F., 810 Tolkacz, Vivian K., 932 Trejo, William H., 603 Tresner, H. D., 1134 Trimble, R. B., 695 Tsuchimoto, Nobuko, 1806 Tsuchiya, Yoshiki, 1457 Tudor, Lynn R., 157 Tuite, John, 1053

Ueda, Seinosuke, 973, 1293 Ulrich, Elizabeth W., 881 Umezawa, Hamao, 1276, 1282

Vanderhaeghe, H., 1557 Vivek, Alapakkam R., 1650 Varga, S., 193 Ventura, A. K., 808 Vermilyea, Barry L., 21 Vezina, Claude, 393 Vlietinck, A., 1557 Volin, Elaine, 223

Wagman, Gerald H., 624

Walker, D. J., 1124, 1972 Walker, Homer W., 21, 1627 Walker, Jerry S., 841 Walker, R. M., 1699 Walker, Robert J., 1086 Walters, Jerald R., 1605 Ward, B. Q., 543 Ware, J. H., 1348 Warren, J. A., 628 Washington, Donald R., 942 Wayne, Lawrence G., 925 Webb. Robert B., 1375 Wedemeyer, Gary, 661 Weinstein, Marvin J., 624 Weirether, Francis J., 841 Weisrock, William P., 708 Welty, R. E., 851, 1309 Werkowski, Stanley, 1300 Wetzel, E. R., 614 Wheat, Robert W., 155 Whitmire, Carrie E., 691 Wiggins, Geraldine L., 1748 Wilcox, Clare, 1684 Willett, Norman P., 1434 Williams, Phletus P., 301 Wilson, J. B., 1179 Wilson, Benjamin J., 819, 1163 Wilson, Elizabeth, 1640 Wilson, James C., 157 Wilson, S. R., 950 Wisniewski, Henry J., 673 Wistreich, George, 1269 Witter, Lloyd D., 524, 1764 Wittler, Ruth G., 1655 Wodzinski, Richard S., 1886 Wolfe, Marian W., 1460, 1528 Wolff, A., 1924 Wolin, M. J., 1955 Wood, R. M., 102 Worthy, T. E., 13 Wu, Bih-Keng, 45 Wynne, E. Staten, 349 Wyss, Orville, 185, 871

Yale, Charles E., 609, 1650 Yang, H., 1309 Yeo, R. G., 1483 Yin, S. C., 1790 Yokobayashi, Kozi, 1439 Yoshida, Fumihiko, 845 Yotis, William, 1512 Young, Viola Mae, 1606 Yu, Juhyun, 1727

Zacharias, Bengt, 69 Závodská, E., 582 Zbinovsky, V., 614 Zemanová, M., 582 Zimmerman, Robert A., 1640 Zimmerman, W. Douglas, 263 zur Nedden, Dorothy, 423, 803 Zweng, Maria F., 1623 Zygmunt, Walter A., 1168, 1174

SUBJECT INDEX

acetic acid, production by Leuconostoc dextranicum,

Achromobacter, differentiation from Moraxella, 33
Achromobacter, hydrocarbon-assimilating strain, 1806
Achromobacter, role in deterioration of rockfish, 1320
Achromobacter anitratus, partial identification of, 1631
Achromonas malhamensis assay of vitamin B₁₂, 1831
Actinomyces, analysis of cell walls, 1713
actinomycetes, cell wall composition of, 279
actinomycetes, medium for isolation from soil, 170
actinomycin, an intermediate in biosynthesis of, 1258
actinomycin monolactone, in biosynthesis of actinomycin, 1258

activated sludge, bacterial enumeration in, 1790 activated sludge nitrification with benzene sulfonates,

adenovirus 3, from infectious hepatitis patient, compared with prototype, 1859

adenovirus SC8, comparison with prototype adenovirus 3, 1859

adenoviruses, production of highly labeled, 1245 adenoviruses, sensitivity to deoxyribonucleic acid inhibitors, 1151

Aerobacter, distinguishing from Escherichia, 1460 Aerobacter aerogenes, hydrolysis of dieldrin by, 661 Aerobacter-Klebsiella from sugar cane, differentiation, 1875

aerobic organisms, apparatus for growth of, 538 Aerococcus viridans in hospital environment, 519 aerosol, bacterial, determining viability of, 78 aerosol apparatus for exposure of mice, 540 aerosol contamination of blending operations, 176 aerosol stability of yellow fever virus, 263 aerosols, bacterial, heat sterilization of, 490 aerosols, bacterial, particle sizes in, 143 aerosols of Serratia marcescens, 1146 aflatoxin, accumulation in peanut kernels, 1230 aflatoxin, detoxification of, 665 aflatoxin, effect of temperature on production of, 988

anatoxin, effect of temperature on production of, 988 aflatoxin, production by *Aspergillus* and *Penicillium*, 1053 aflatoxin, production by fungi, 819 aflatoxin B₂, thin-layer chromatographic identifica-

tion, 946 aflatoxin-producing fungi, from cured meats, 1945 aflatoxin production by Aspergillus parasiticus, 158 agar, for plaquing Venezuelan encephalitis virus, 808 agar diffusion method for colicin assay, 1468 agar wells, preparation for antibiotic assay, 1611

agnotobiotic cultures, factors influencing *Entodinium* simplex, 1044 air filter for removal of virus from air, 1465 air filters, for germ-free isolators, 1650 air sampler, new multi-slit, large-volume, 1120

of, 1895
airborne organisms, identification of aerococci in, 519
airborne virus, survival of, 1811
airflow cabinet, laminar, modified, 1086
airflow systems, laminar, for tissue culture, 1804

airborne infection of laboratory workers, prevention

alcoholic fermentation of grape juice, 572 alcohol precipitation, collection of extracellular material from *Rhizobium japonicum* by, 155

algae, choline distribution in, 620 algae, continuous-culture apparatus for, 232 algae, gas exchange of, 669

algae, inositol distribution in, 620

alkaline phosphatase production from *Escherichia* coli, 326 alkalinization, effect on erythromycin activity, 1288 alkanes, assimilation by fungi, 487

alkanes, assimilation by fungi, 487 alkanes, effect on growth of aquatic-derived bacterium, 421

alkenes, assimilation by fungi, 487 alkylbenzenes, oxidation by *Micrococcus*, 532 alkylbenzenes, production of *trans*-cinnamic acid from, 320

Alternaria longipes, toxicity to chicks, 1596

amethopterin, effect on incorporation of radioactive thymidine, 1245 amino acid analysis of Actinomyces cell walls, 1713

amino acid analysis of *Actinomyces* cell waits, 1713 amino acid content of *Bacillus stearothermophilus* spores, 960 amino acid degradation by microorganisms, detection

of, 1591 ammonium-oxidizing bacteria in marine waters,

enumeration, 1646 ampicillin, in vitro effect on enterococci, 645

ampicillin-cloxacillin, activity against Proteus morganii, 1507

amprolium pyrophosphotransferase, 961
anaerobic system, disposable, 848
androgens, action on staphylococci, 1512
animal cells, medium for growth in suspension, 53
animal disease, Escherichia coli O group 101 in, 435
antibiotic, kalafungin, produced by Streptomyces
tanashiensis, 1815

antibiotic, phosphorus-containing, prasinomycin, 603 antibiotic assay, equations for, 777 antibiotic assay, preparation of agar wells for, 1611 antibiotic combinations, assay for individual components.

antibiotic assay, preparation of agait wens for, 1011 antibiotic combinations, assay for individual components, 877

antibiotic combinations, effect of media on in vitro studies of, 890 antibiotic disc dispenser, 1606

antibiotic discs, effect of humidity on, 656 antibiotic dose-response line, assay method, 777 antibiotic LL-AC541, 614

antibiotic-producing Aspergillus versicolor, 340

antibiotic-producing organisms, detection in microbial populations, 10 antibiotic susceptibility of anaerobic ruminal bacteria,

antibiotics, synergism with hyperoxia, 260

antibody formation, effect of statolon-induced interferon on, 1040

antibody formation in guinea pigs, 1207 antibody response to streptococcal vaccination, 509 antifungal antibiotic, versicolin, 749 antifungal activity of isothiocyanates, 582 antifungal properties of cranberry juice, 1524 antigen, rubella virus hemagglutinating, 154 antigenic response in rabbits, to streptococcal M-

typing antisera, 1822 antigens associated with serotype of Rhizobium japoni-

cum, 203 antigens for Mycoplasma gallisepticum, 558 antimeasles agents, 1789

antimicrobial activity of 5-diazouracil, 1792 antimicrobial activity of dimethylsulfoxide, 1953 antimicrobial activity of *Lawsonia inermis* L., 663

antimicrobial evaluation of 1-methyl-3-nitro-1-nitrosoguanidine, 1879

antimycin A-producing organism, respiratory chain of, 29

antineoplastic alkaloid, assay in mouse tissues, 867 antiserum, varicella, production of, 160

antiserum-agar plates, identification of Pasteurella pestis on, 649, 1114

antistreptolysin O test, 184

antistreptolysin O titer, effect of blood cell type, 1761 antiviral agent, herpes simplex- and vaccinia-specific, 827

antiviral properties of biologically active compounds, 370

antiviral substance in *Chlorella* cells, 1809 apparatus for growth of aerobic organisms, 538 aquatic-derived bacterium, growth in presence of

long-chained alkanes, 421 aqueous phase polymers, for Junin virus purification, 1602

L-arabinose, effect on inhibition of sporulation, 1949 arginine dihydrolase activity in *Streptococcus faecalis*,

1543 arginine dihydrolase activity in Streptococcus faecium,

1543
Artemisia, antibacterial action of oils of, 441

Arthrobacter, manganese oxidation by extract from,

ascorbic acid, sporicidal action for Clostridium, 349 asparagus, canned, spoilage bacteria in, 45
Aspergillus, aflatoxin production by, 158, 1053, 1945
Aspergillus, from damaged flue-cured tobacco, 851
Aspergillus awamori, phosphatase production by, 973
Aspergillus flavus, aflatoxin production in peanuts, 1230

Aspergillus flavus, as source of aflatoxin, 819
Aspergillus fumigatus, trypacidin in cultures of, 1251
Aspergillus glaucus, spoilage fungi of prunes, 1853
Aspergillus oryzae, extracellular proteinases of, 1799
Aspergillus quercinus, 5'-nuclease production by, 1293
Aspergillus sp., aflatoxin production by, 1945
Aspergillus versicolor, antifungal antibiotic from, 749
Aspergillus versicolor, mutagens for regeneration of,

Aspergillus wentii, starch hydrolysis by conidia of, 1678

assáy for cephaloglycin, 1132

assay for colicins, agar diffusion method for, 1468 assay for penicillin, cephalothin, and chloramphenicol, used in combination, 877

assay for penicillin, improving reliability, 1941

AutoAnalyzer, for complement fixation tests and C' titrations, 1635

automatic diluting device, 1414

automatic sample collector for continuous cultures, 1381

autotrophic ammonium-oxidizing bacteria in marine waters, enumeration, 1646

 8-azaguanine, use to differentiate leptospires, 174
 8-azaguanine incorporation by Cladosporium resinae, 1454

Azotobacter cysts, rupture and survival of, 871

Bacillus, decarboxylation of 4-hydroxycinnamic acids by, 667

Bacillus, sporeforming, manganese oxide reduction by, 695

Bacillus megaterium, synchronous sporulation in, 963 Bacillus stearothermophilus, casein inhibition of, 628 Bacillus stearothermophilus, heat destruction of, 1627

Bacillus stearothermophilus, in food spoilage, 45
Bacillus stearothermophilus spores, amino acid content,
960

Bacillus subtilis, effect of streptomycin on enzyme systems of, 1786

Bacillus subtilis, sporicidal effect of peracetic acid, 1782

Bacillus subtilis spores, effect of incineration on, 291 Bacillus subtilis spores, inactivation by γ -irradiation, 810

Bacillus subtilis var. niger, dry-heat resistance of, 735
Bacillus subtilis var. niger, obtaining free spores of, 180

Bacillus subtilis var. niger on Teflon and Kapton, resistance to dry heat, 1841

Bacillus subtilis var. niger spores, cell moisture in thermal inactivation, 1240

Bacillus subtilis var. niger spores, effect of sodium hypochlorite on, 787

Bacillus subtilis var. niger spores, resistance to dry heat, 1110

Bacillus thuringiensis, spores and crystals, production in laboratory, 1098

bacteria, detection in soil, electron microscopy, 932 bacteria characterization, by degradation of amino acids, 1591

bacterial cell yields, on hydrocarbons, 1886 bacterial enumeration, by chemical dispersants, 1790 bactericidal activity, method for study of, 890 bacteriophage T7 production, 1783

bacteriophage, typing reactions on Brucella, 1179 bacteriophage typing scheme for Salmonella braenderup, 1708

Bacteroides vulgatus, for testing Fluid Thioglycollate Medium, 1102

benzene sulfonates, effect on sludge nitrification, 62 benzylpenicillin, in vitro effect on enterococci, 645 bioautographic technique for detection of antibioticproducing organisms, 10

biochemical characterization of L-phase variants,

biochemical differentiation of Klebsiella-Enterobacter-Serratia, 1548

biochemical identification of salmonellae, reagent tablets for, 1629 biohazard hood, for control of airborne infections in laboratories, 1895

biotin, effect on fermentation of grape juice, 572 biotin in seawater, 366

blending operations, aerosol contamination of, 176 bloater formation, in cucumber fermentation, 1029 blood coagulation test for citrate utilization, 168

blood coagulation test for citrate utilization, 168 blood cultures, system for transport to laboratory, 1892

Bordetella pertussis, detoxification of, 1211 Bordetella pertussis, mouse-lethal toxin in liquid cultures, 1400

botulinal toxins, detection by immunodiffusion, 21 botulinum toxin, mouse assay test for, 1105 botulism, diagnosis by immunofluorescence, 102 *Brevibacterium ammoniagenes*, mutant of, 981 Brilliant Green Agar, for isolation of salmonellae, 746

briniant Green Agar, for isolation of saminhenae, 740 bronchitis, association of Moraxella duplex with, 315 Brucella species, phage typing reactions on, 1179 brucellaphage, typing reactions on Brucella, 1179 burn infections, effect of hyperbaric oxygen on, 260

burn infections, effect of hyperbaric oxygen on, 260 burong dalag, lactic acid bacterial fermentation of, 1669

Butyrivibrio sp., lysis in rumen fluid, 714

cabinet, laminar airflow, mock-up, 1086 cage, ventilated isolation, 762

calcium nutrition of Sphaerotilus, 1364

camptothecin lactone, assay for distribution in tissues, 867

Candida tropicalis, transglucosyl-amylase of, 216 canned meat, curing agents in preservation of, 401 capillary-action replicating apparatus, 151 capillary precipitin test for M protein, 122 capsule of hydrocarbon-utilizing bacteria, 185

carbenicillin, absorption and excretion carbenicillin, against *Pseudomonas*, 1753

carbobenzoxy peptides, antiviral activity on measles virus, 1789

carbohydrate fermentation, relation to microbial polysaccharide in rumen, 1672

carbon dioxide production by Leuconostoc citrovorum, 56

carbon dioxide reduction, in space, by Hydrogenomonas eutropha, 822

carbon replication, taxonomy by, 935

carbon sources, effect on Aspergillus parasiticus, 158 carrageenan medium, for recovery of marine bacteria,

casein inhibition of *Bacillus stearothermophilus*, 628 catalase activity, effect on coagulase-positive staphylococci, 267

catalase-negative cocci, numerical taxonomy, 1024 cattle infertility, role of fungal estrogen, 797

CCl₄ inhibition of CH₄ production, in cultures of rumen organisms, 1955

-cell cultures, small-volume, method for preparation,

cell wall composition of actinomycetes, 279 cellulolytic *Cellvibrio* from polluted water, properties

cellulolytic *Cellvibrio* from polluted water, properties of, 1424

cellulolytic rumen bacteria, degradation of hemicellulose, 781

Cellulomonas, cellulose-utilizing, 1140

cellulose, demonstration in cellular slime molds, 106 cellulose, production of glucose by enzymatic hydrolysis of, 419

cellulose-utilizing bacterium, isolation, 1140
Cellvibrio from polluted water, properties of strains, 1424

cephalexin, activity in vitro, absorption and urinary excretion, 1684

cephaloglycin, in vitro antimicrobial activity, 1006 cephaloglycin, method for detection and assay, 1132 cephalosporin C derivative, cephaloglycin, oral adsorption, 1006

cephalosporins, salmonellae susceptibility to, 1570 Cephalosporium, proteinase production by, 90 Cephalosporium, proteinase-yielding, identification of, 1598

Cephalosporium acremonium, desacetylcephalosporin C in culture filtrates of, 1011

Cephalosporium acremonium metabolism, effect of methionine and sulfate, 1913

CH₄, rumen production of, inhibition by CCl₄, 1955 cheddar cheese, Salmonella typhimurium contamination of, 862

cheese, salmonellae in, 862

cheese ripening, role of lactic acid bacteria in, 527 chemical dispersants, in bacterial enumeration, 1790 cherries, preservative effects of phosphate compounds on, 138

on, 138
chick interferon, microassay for, 1706
chicken meat, bacterial content, 445
Chlorella ellipsoidae, antiviral substance from, 1809
Chlorella pyrenoidosa, gas exchange of, 669
Chlorella pyrenoidosa, mass culture of, 496

chlorinated pesticides, effect on bacteria in milk, 799 chlortetracycline and tetracycline, coproduction by Streptomyces aureofaciens, 1285

choline distribution in algae and fungi, 620

chondroitin sulfatase activity of microorganisms, method for screening, 1434

chromatographic bioassay for gentamicin complex,

chromatography, gas, detection of bacteria by, 636 ciliate protozoa-free animals, 1475 circulating tank test, evaluation of germidices in cut-

ting fluid emulsions, 1437 citrate utilization, blood coagulation test for, 168

Cladosporium resinae, 8-azaguanine and guanine incorporation by, 1454

Claviceps paspali, long-term preservation of, 1100 clean rooms, evaluation of, 480

Clostridium, sporicidal action of ascorbic acid for, 349

Clostridium botulinum, comparative studies, 732 Clostridium botulinum, nonheme iron protein in, 207 Clostridium botulinum, type F in Argentina, 732 Clostridium botulinum toxin, production in food, 102 Clostridium botulinum toxins, detection in foods, 21 Clostridium botulinum type E, detection of, 1105 Clostridium botulinum type E, detection in fish, 673 Clostridium botulinum type E, incidence in Pacific

Northwest, 553 Clostridium botulinum type E spores in smoked fish,

Clostridium pasteurianum, defined medium for, 296

Clostridium perfringens, lecithinase activity, 1619, 1802 Clostridium perfringens, lecithinase production by, 1420

Clostridium perfringens, medium for sporulation of, 82 Clostridium perfringens type A enteritis, α-toxin role in, 1235

Clostridium perfringens type A infection in lambs, 1235 Clostridium sporogenes in chicken meat, 445

Clostridium tetani toxin, continuous production of, 69 Clostridium thermosaccharolyticum, inhibition of sporulation, 1949

Cochliobolus carbonum, murine toxicity of, 1719 cocoa, effect on salmonellae, 424

coenzyme A, production by hydrocarbon-assimilating bacteria, 1806

cold-water disease, Cytophaga psychrophila from, 97 colicins, agar diffusion method for assay of, 1468 coliforms in fish products, 193

coliphage T1, dried, effect of humidity, 1539 colony counting, stereoscopic pattern method, 1795 commercial absolute filter, for virus removal from air,

complement, effect on virus neutralization, 1076 complement fixation procedure, automated, standardized, 1635

containment of microbial aerosols, 1225 contamination, in protein feed supplements, 1002 contamination, microbial, sampling by spray technique, 1935

contamination, prevention by laminar airflow equipment, 182

contamination on hypodermic syringes, prior to sterilization, 1156

continuous culture, sample collector for, 1381 continuous-culture apparatus for long-term use, 232 continuous-culture device, electronically controlled,

continuous culture of Escherichia coli, 326 continuous culture on mixed media, 1337

continuous-flow apparatus, attached growth of Sphaerotilus in, 1191

copper-chrome-arsenic-treated wood, bacterial decay in, 1599

Corynebacterium diphtheriae, toxigenicity test, 1748 cottage cheese, detection of virus in, 595 coxsackie virus, detection in food, 595 cranberry juice, antifungal properties, 1524

cranberry juice, antifungal properties, 1524 cryopereservation, natural pathogenesis of malarial parasites, 1422

cryptococcosis, serological tests for diagnosis, 1907

Cryptococcus neoformans, fluorescent-antibody reagent for, 271

Cryptococcus neoformans, medium for isolation, 689 cucumber fermentation, gas-forming lactic acid bacteria in, 1029

culture apparatus, technique for sterile connections of,

culture preparation, inoculator system for, 1797 curing agents, effect on anaerobic spores, 406 curing agents, in preservation of canned meat, 401 cyclopropane fatty acids, detection in lipids, 549 cysts, *Azotobacter*, rupture and survival of, 871 *Cytophaga psychrophila*, characteristics of, 97

DDT, effect on bacteria in milk, 799

dairy products, Leuconostoc citrovorum in fermentation of, 56

decay, bacterial, in treated wood, 1599

deer, effect of Artemisia oils on rumen bacteria of, 441 defaunation of ruminant animals, 1475

dehydration of multiple samples, 812

Delle procedure, for yeast stabilization in wine, 1067 density gradients, fraction collector for, 958 deoxyribonucleic acid inhibitors, virus sensitivities to.

1151
depuration of shellfish, by individual assay, 1865
dermatophytosis in guinea pigs, treatment with myxin,

desacetylcephalosporin C, formation in cephalosporin

C fermentation, 1011 destruction of bacterial spores, Microtiter technique,

detection of Salmonella, single-culture technique, 1695 detergents, metabolism by sewage microorganisms, 48 detoxification of Bordetella pertussis, 1211

dextrose, use in preparation of Mycoplasma gallisepticum plate antigens, 558

diagnosis of cryptococcosis, 1907

diagnostic criteria for pathogenic pseudomonads,

diagnostic key, for identification of mycobacteria, 925 5-diazouracil, antimicrobial evaluation of, 1792 dieldrin, effect on bacteria in milk, 799

dieldrin, partial hydrolysis by Aerobacter aerogenes,

diluting device, automatic, 1414 dimethyl sulfoxide, virucidal properties of, 1625 dimethylsulfoxide, in vitro antimicrobial activity of,

1953 diphtheria toxoid, removal of porphyrins from, 528

diphtheria toxoid, removal of porphyrins from, 528 direct-method enumeration of marine water bacteria, 1646

disc dispenser, for antibiotics, 1606 disinfectant, vapor-phase, effect of cell moisture, 641 disinfectants, at subzero temperatures, 787 disinfection by spray-fog technique, 223

dispenser, antibiotic disc, 1606 disposable anaerobic system, for field and laboratory use, 848

disruption of bacterial cells by zeolite, 1269 drag-reducing polymers, effect of pH on production,

1253 drug resistance, influence of inactivated sensitivity discs on, 656

dry heat, resistance of Bacillus subtilis var. niger spores to, 1110

dry-heat destruction of spores, 343

dry-heat sterilization, microbial resistance to, 735 dry milk, thermal resistance of salmonellae in, 998 drying, effect on stability of influenza virus suspensions, 835

dulcitol-selenite, for Salmonella detection, 1695 dye-diffusion test, for staphylocoagulase assay, 1608

egg white foam products, Salmonella typhimurium in,

electron microscope, for viewing bacteria in soil, 932 electron microscopy, preparation of specimens for, 812

embryonic chick cells, maintenance in tubed culture, 25

Endomycopsis fibuliger, mevalonic acid production by, 965

Endothia parasitica, rennin enzyme of, 248 enrichment broth, comparison with stools for shigellae

isolation, 1383 enteric pathogens, detection of, 1383, 1387 enteric pathogens, medium for, 577, 579 enteritis, α-toxin role in Clostridium perfringens, 1235 Enterobacter, distinguishing from Klebstella, 1528,

1548
Enterobacter, isolation from feces, 896
Enterobacteriaceae, elimination from seawater, 1616
enterococci, in vitro effect of penicillins on, 645
enterococci in fish products, 193
enterotoxin, staphylococcal, heat inactivation, 308
enterotoxin A, production in milk, 917
enterotoxin B, lethal shock after, 187
enteroviruses, food-borne, detecting, 1564
enteroviruses, hemagglutinating activity of, 703
enteroviruses, reference, 1575
Entodinium simplex, agnotobiotic cultures of, 1044
Entomophthora, protease production by, 450
enzyme, milk-clotting, from Mucor pusillus, 1727
enzyme systems of Bacillus subtilis, streptomycin ef-

fect on, 1786 equine infectious anaemia, early diagnosis, 1093 erythromycin, enhancement of antibacterial activity, 1288

1288
Escherichia, tests for distinguishing from Aerobacter,

Escherichia coli, alkaline phosphatase production from, 326

Escherichia coli, damage by moist heat, 1394
Escherichia coli, elimination from seawater, 1616
Escherichia coli, heat-treated, 335
Escherichia coli, heat-treated, 335

Escherichia coli, identification of unclassified strains, 417 Escherichia coli, phagicin isolation from, 827

Escherichia coli, phenol-treated, viability, 239
Escherichia coli assay of vitamin B₁₂, 1831
Escherichia coli B, host for bacteriophage T7, 1783
Escherichia coli O group 101 in animal disease, 435
ethylene oxide sterilization, thioglycolate broth as test

for, 1742

Euglena gracilis assay of vitamin B₁₂, 1831

evaluation of germicides, cutting fluid emulsion test

for, 1437 exsanguination of rabbits, apparatus for, 1952 extracellular drag-reducing polymers, synthesis of, 1253

extracellular phytase, survey of microorganisms producing, 1348

extraterrestrial life, detection of, 724

fatty acid composition of rumen bacteria, 1406 fatty acids, detection in lipids, 549 fatty acids, determination in fermentation media, 285 fecal pollution of fish products, 193 feed components, srceening for *ralmonella* by polyvalent H method, 1872

feed crops, aflatoxin production control in, 988 feed supplements, sources of contamination, 1002

fermentation media, determination of fatty acids in, 285

fermentation of burong dalag, 1669

fermentation of glucuronic acid by Lactobacillus brevis, 536

fermentation of L-proline, with Kurthia catenaforma, 1200

fermentation rates of grape juice, 572

ferredoxin, production of Clostridium pasteurianum for isolation of, 296

fibroblastic tissue cultures, establishment from placenta, 1623

film-flow reactor, for study of microbiological kinetics, 1095

filters, air, for germ-free isolators, 1650 filters, direct counts of spores on, 436

filters, staining bacteria on, 433

fish, detection of *Clostridium botulinum* type E in, 673 fish, effect of irradiation on, 242

fish, freshwater, myxobacterial isolates from, 1901 fish, frozen breaded, bacteriological survey of, 147 fish, incidence of *Clostridium botulinum* type E in, 553

fish, incidence of *Clostridium botulinum* type E in, 553 fish, proteolytic activity of organisms from, 128 fish, smoked, *Clostridium botulinum* type E spores in,

133 fish products, fecal pollution of, 193

fish spoilage bacteria, incidence and detection, 1734, 1738

flagella, malachite green staining, 792 flax, effect of storage on retting, 1942

Flavobacterium, role in deterioration of rockfish, 1320 flavoring agents, production by fermentation, 981

flue-curing tobacco leaves, effect on fungi, 1309
Fluid Thioglycollate Medium, Bacteroides vulgatus, for testing, 1102

fluorescence, indirect, mumps antibody detection by, 1613

fluorescent-antibody reagent for Cryptococcus neoformans, 271

fluorescent brightener, in study of cellular slime molds, 106

fluorescent-cell counting of yellow fever virus, 263 fluoroacetic acid, effect on inhibition of sporulation, 1949

1949 food, canned, spoilage bacteria in, 45 food, chicken meat, bacterial content of, 445

food, Clostridium botulinum type E toxin in, 102 food, salmonellae associated with, 1 food-borne enteroviruses, detecting, 1564

food-borne virus, system for detection, 595

food spoilage, Mimeae in, 1776 foods, coagulase-positive staphylococci from, 535

foods, frozen, bacteriological survey of, 147 fraction collector, for density gradient centrifugation

analysis, 958 free radical production, related to survival after

lyophilization, 1081 freeze-dehydration, effect on bacterial content of meat, 445

freeze-dried rubella virus hemagglutinating antigen,

freeze-drying Shigella strains, 1779

freezing in skim milk for storage of mycobacteria, 355 French pressure cell, modification of valve, 1605 freshwater fish, myxobacterial isolates from, 1901 freshwater fish, proteolytic activity of organisms from, 128

freshwater myxobacteria, isolation of, 795

frozen breaded fish, bacteriological survey of, 147 frozen potatoes, microbial deterioration, 759

frozen vegetables, catalase-negative cocci in contamination of, 1024

fructose, estimation of glycerol in presence of, 1807 fuel isolates in hydrocarbon-fuel emulsions, 569

fuel water system, microbial growth in, 426

fungal estrogen, in cattle infertility, 797 fungal metabolites, in quality of tomato products, 948

fungal spores, transformation of steroids by, 393 fungal susceptibility of polyurethanes, 900 fungi, aflatoxin production by, 819

fungi, assimilation of alkanes and alkenes, 487

fungi, choline distribution in, 620

fungi, environmental control of, 114

fungi, enzyme production by, 90

fungi, influence of phosphate compounds on, 138

fungi, inositol distribution in, 620

fungi, isolation from moldy tobacco, 851

fungi, medium for isolation from soil, 170 fungi, pathogenic, plating, 1610

fungi from tobacco leaves, 1309

Fusarium, penicillin acylase of, 1557

gamma irradiation and heat, in spore inactivation,

gas chromatographic separation, components of fermentation media, 285

gas chromatography, detection of bacteria by, 636 gas chromatography, for early detection of equine infectious anaemia, 1093

gas exchange of algae, 669

gas-phase storage of standard inoculum in liquid nitrogen, 912

gastight safety cabinet system, use of microscope in, 659

gel-diffusion reader, 793

gentamicin, chromatographic bioassay for, 624 germination, inhibition by Veronal, 801

germ-free isolators, air filters for, 1650

glassware facility, for microbiological laboratories, 950

glucose, production by enzymatic hydrolysis of cellulose, 419

glucose, production by yeasts, 1847

glucose production, by spores of Aspergillus wentii, 1678

glucuronic acid, fermentation by Lactobacillus brevis, 536

glutaraldehyde, inactivation of yellow fever virus by, 177

glycerol ester hydrolase activity of lactic acid bacteria,

glycerol in presence of fructose, estimation of, 1807 gram-negative bacteria, 5-diaxouracil activity against, 1792

gram-negative rods, lactose-fermenting, 1528 grape juice, fermentation rate of, 572

group A streptococcus M antigens, microtiter technique, 1640 growth detection, methods in search for extraterrestrial, 724

guanine incorporation by Cladosporium resinae, 1454

haddock fillets, spoilage flora of, 1738

Haemophilus aegyptius, hemagglutinating property of, 1343

Haemophilus in the throat, 256

hake, Pacific, microbial flora of, 1937

Hansenula wingei in assay for camptothecin lactone in tissues, 867

heat-injured Streptococcus faecalis, salts in recovery media, 772

heat resistance, of salmonellae, in dry milk, 998

heat resistance of Salmonella, effect of water activity on, 1621

heat sterilization of water, 609

heat-treated Escherichia coli, revival of, 335

hemagglutinating activity of enteroviruses, 703

hemagglutinating property of Haemophilus aegyptius, 1343

hemagglutination, indirect, for type-specific antibody titration, 1640

hemagglutination and hemolysis, by lichen extracts, 1137

hemagglutination-inhibition test, diluent for, 691 hemagglutinin, rubella, morphology of, 437 hemagglutinin, rubella, preparation of 803

hemagglutinin, rubella, preparation of, 803 hemagglutinin, rubella, sodium deoxycholate for preparation of, 1624

hemagglutinin, rubella, stability of, 423

hemagglutinin enhancement, parainfluenza virus 2,

hemicellulose, degradation and solubilization of, 781 hemodialysis tank, Kolff-type, sanitizing, 1259 henna, antimicrobial activity of, 663

heptachlor, effect on bacteria in milk, 799

herpes simplex virus, sensitivity to deoxyribonucleic acid inhibitors, 1151

high-temperature resistance of Bacillus subtilis spores on Kapton and Teflon, 1841

Histoplasma capsulatum, effect of environment on morphology, 114

Histoplasma capsulatum, yeast-phase growth of, 236 homocarnosine activity against staphylococcal infections, 1457

hospital disinfection by spray-fog technique, 223 hospital environment, *Aerococcus viridans* in, 519 hospital operating rooms, comparison with industrial

clean rooms, 480 host-parasite reactions to parabarosis, 1551 human enteroviruses, certified reference seed virus,

human interferon, microassay for, 1706

humidity, effect on survival of coliphage T1, 1539 hyaluronidase activity of microorganisms, method

for screening, 1434 hydrocarbon-assimilating bacteria, coenzyme A pro-

duction by, 1806 hydrocarbon-fuel emulsions, bacteria in, 569

hydrocarbon-utilizing bacteria, capsule of, 185 hydrocarbons, bacterial cell yields from, 1886

hydrocarbons, oxidation by filamentous fungi, 487

hydrogen peroxide, resistance of coagulase-positive staphylococci to, 267

Hydrogenomonas eutropha, in regenerative life-support system, 822

4-hydroxycinnamic acids, decarboxylation by Bacillus strains. 667

hyperoxia, effect on microorganisms, 476 hyperoxia, synergism with antibiotics, 260 hypobaric environments, effect on susceptibility, 1451 hypodermic syringes, contamination on, 1156

ice, ultraviolet irradiation of, 463 identification of *Micrococcaceae*, 906 identification of mycobacteria, diagnostic key to, 925 identification of penicillinase-producing staphylococci, 1261

incinerator, microbiological evaluation of, 490 incinerator for industrial refuse, 291

indole production, medium for determining, 668 industrial application of continuous streptokinase production, 73

industrial clean rooms, comparison with hospital operating rooms, 480

industrial refuse, effectiveness of incinerator for, 291 inertial impingement, air sampler, 1120 infections in laboratories, control of airborne, 1895 infectious hepatitis, relationship of adenovirus 3 with, 1859

infectious ribonucleic acid of a picornavirus, 1811 infertility in cattle, 797

influenza virus, biologically active compounds against, 370

influenza virus, assay in canine kidney cells, 588 influenza virus, intact, antigenicity of, 1699 influenza virus, stability of suspensions after drying, 835

influenza virus hemagglutination, inhibitor of, 563 influenza virus infectivity, preservation by lyophilization, 362

inhibition of staphylococci by antibiotics, 1174 inoculation route, effect on antibody formation, 1207 inoculator, multipoint, for petri dishes, 944 inoculator system, multipoint, 1797 5'-inosinic acid, accumulation by a mutant, 981

inositol distribution in algae and fungi, 620 instrument, for study of thermal inactivation, 991 intact influenza virus, antigenicity of, 1699

interferon, effect on tail lesions of vaccinia virusinfected mice, 1314

interferon, human and chick, microassay for, 1706 interferon, induction by statolon, 468

interferon, statolon-induced, effect on immune response, 1040

interferon production in mice, effect of altered gaseous environment, 1551

intraperitoneal injection of mice, errors in technique, 1418

ion concentration, effect on rupture of Azotobacter
cysts, 871

irradiation, effect of *Bacillus subtilis* spores, 810 iron-bound protein in *Clostridium botulinum*, 207 irradiation, effect on bacterial aerosols, 143 irradiation, effect on microflora of fish, 242 irradiation, removal of thiamine from media by, 530

irradiation of ice, 463 isoamylase formation by *Pseudomonas*, 1439 isolation cage, ventilated, 762 isothiocyanates, antifungal activity of, 582

jet-fuel microbial isolates, effects on polyurethane foam, 1826

Junin virus, purification by aqueous polymer system, 1602

kalafungin, produced by Streptomyces tanashiensis, 1815

kanamycin inactivation by enzymes of *Pseudomonas* aeruginosa, 1276 kanamycin inactivation by *Staphylococcus* aureus,

1282 Kapton film, *Bacillus subtilis* spores on, 1841

Klebsiella, distinguishing from Enterobacter, 1528, 1548

Klebsiella, isolation from feces, 896 Klebsiella-Enterobacter (Aerobacter)-Serratia, differentiation, 1548

Kolff-type hemodialysis tank, sanitizing, 1259 Kurthia catenaforma, L-proline production by, 1200

L forms, survival in aerosols, 143 L-phase variants, biochemical characterization, 1655 laboratory-acquired infections, aerosols in, 1146 lactate metabolism by ruminal ingesta, 680 lactic acid bacteria, glycerol ester hydrolase activity of, 524

lactic acid bacteria, in cucumber fermentation, 1029 lactic acid bacterial fermentation, in burong dalag, 1669

lactobacilli on plants, 1326

Lactobacillus, in fermenting brines, 1029

Lactobacillus brevis, fermentation of glucuronic acid by, 536

Lactobacillus bulgaricus, growth in tomato juice, 1215, 1220

Lactobacillus casei, anaerobic growth yields, 805
Lactobacillus heterohiochii, for assay of mevalonic acid, 965

Lactobacillus leichmannii assay of vitamin B₁₂, 1831 lactose-fermenting gram-negative rods, identification of, 1528

lactose-fermenting strains of *Proteus*, incidence, 881 laminar airflow biological cabinet, modified, 1086 laminar airflow equipment, use in microbiology, 182 laminar airflow systems for tissue culture, 1804 laminar flow microbiological safety cabinets, 1478 *Lawsonia inermis* L., antimicrobial activity of, 663 lecithinase activity of *Clostridium perfringens*, 1619, 1802

lecithinase production by Clostridium perfringens, 1420

Leguminoseae, hemagglutination and hemolysis, 1137 Leptospira, characterization of, 1584 Leptospira, serum in culture media for, 534 leptospires, differentiation by 8-azaguanine, 174 leptospires, lipase activity of, 1584 leptospires, purine analogue sensitivity of, 1584 lethal shock after staphylococcal enterotoxin B, 187

Leuconostoc citrovorum, carbon dioxide production

Leuconostoc citrovorum, acetic acid production by.

lichen extracts, hemagglutination and hemolysis by, 1137

lincomycin, bactericidal and bacteriostatic activities. 1663

linear gradient dehydration, for electron microscopy,

linen straws, effect of storage on retting, 1942 lipase, production by Torulopsis ernobii, 845

lipase activity of Mucor pusillus, 617

lipid materials, effect on production of lipase, 845 lipids, detection of cyclopropane fatty acids in, 549 liquid nitrogen, for preservation of standard inoculum. 912

Littman Oxgall Agar, to isolate Cryptococcus neoformans, 689

live vaccine strain, growth of Pasteurella tularensis, 855

lyophilization for preservation of influenza virus, 362 lyophilized bacteria, free radical production and viability, 1081

lysostaphin, inhibition of methicillin-resistant staphylocci by, 1174

susceptibility of coagulase-negative lysostaphin. staphylococci to, 1168

lysozyme, in staphylococci identification, 1745

M protein, as streptococcal vaccine, 509

M protein capillary precipitin test, 122 Macrophomina phaseoli, metabolite in aflatoxin B2 identification, 946

malachite green, for staining flagella, 792

malarial parasites, cryopreservation of antimalarial resistance of, 1422

mammalian cells, method for replicating, 841

manganese nodule bacterium, manganese oxidation by extract from, 197

manganese nodules, bacteriology of, 695

p-mannitol, production by yeasts, 1847 marine, semimarine, terrestrial bacteria, properties,

marine bacteria, mutagenesis to semimarine or ter-

restrial, 1633 marine bacteria, taxonomic criteria for, 708

mass culture of microorganisms, method, 954

mass culture of synchronized cells, 496 measles virus, inhibitory drugs for, 1789

meat, chicken, bacterial content of, 445

meat, cured and aged, aflatoxin-producing fungi from,

meat-curing agents, effect on anaerobic spores, 406 meat products, canned, curing agents in preservation

of, 401 media, selective removal of thiamine from, 530

media for Leptospira, serum in, 534

medium for Clostridium pasteurianum, 296

medium for growth of animal cells in suspension, 53 medium for isolation of enteric pathogens, 577, 579 medium for sporulation of Clostridium perfringens, 82

membrane culture, exposing cells to test atmospheres,

mengovirus, effect of statolon against, 468

mengovirus nucleic acid infectivity, enhancement by putrescine, 1257

meningococci, sulfonamide susceptibility test for, 1056

metabolic studies, apparatus for, 1426

metallic cations, effect on phenol-treated Escherichia coli. 239

methane fermentation, of waste organic substrates, 1518

methanogenic organisms in sludge fermentation, 358 methicillin-resistant staphylococci, inhibition by lysostaphin, 1174

methionine effect on Cephalosporium acremonium metabolism, 1913

1-methyl-3-nitro-1-nitrosoguanidine, evaluation, 1879 methylcellulose assay for rhinoviruses, 1331

mevalonic acid, production by fermentation, 965 micro antistreptolysin O test, 184

microbial aerosols, containment, 1225

microbial content of nonsterile pharmaceuticals, 1924 microbial energy metabolism, 805

microbial growth in rumen content, measuring, 1124 microbial sampling, spray technique for, 1935 microbiological safety cabinets, laminar flow, 1478

Micrococcaceae, identification, 906 Micrococcus cerificans, oxidation of alkylbenzenes by,

microtiter, heat destruction of bacterial spores by, 1627

microtiter indirect hemagglutination, for streptococcal M-protein antibody detection, 1640

microtiter technique, for evaluating viable cells in bacterial cultures, 1036

microwave cookery, destruction of salmonellae in egg white foam products by, 1929

milk, carbon dioxide production in, 56 milk, effect of ultrasound on bacterial counts, 470

milk, enterotoxin A production in, 917 milk, inhibition of Bacillus stearothermophilus by, 628

milk, isolation of salmonellae from, 746 milk, lactobacilli growing in, 1215, 1220

milk chocolate, salmonellae contamination in, 1939 milk-clotting enzyme from Mucor pusillus, 1727

milk-clotting enzymes, synthesis by Mucor pusillus.

milk-curdling enzyme from Endothia parasitica, 248 Mimege, differentiation of, 33

Mimeae, response to physical and chemical agents, 1776

mixed bacterial populations, new technique, 1036 mixed cultures on mixed substrates, 1337 mixed microbial populations, enumeration, 330 moist-heat damage to Escherichia coli, 1394 molybdate-agar medium, for yeast identification, 1503 Moraxella, differentiation from Achromobacter, 33 Moraxella duplex, association with chronic bronchitis,

mortality of altitude-exposed mice, 1451 motile marine bacteria, storage and source, 1633 motility-indole medium, improved, 668 mouse-lethal toxin in Bordetella pertussis, 1400 Mucor pusillus, lipase activity of, 617

Mucor pusillus, rennin crystal from, 1727

multipoint inoculator, for petri dishes, 944 multipoint inoculator system, 1797 multi-slit impinger, air sampler, 1120 mumps antibody, detection by indirect fluorescence,

1613
murine toxicity of Cochliobolus carbonum, 1719
mutagens for regeneration of Aspergillus versicolor,
340

mycelium cake, protein supplement in animal diet, 1723

mycobacteria, isolation from sputum, 506 mycobacteria, key to identification, 925 mycobacterial cultures, preservation of, 355 mycobacterial infections in mice, 500 Mycoplasma gallisepticum plate antigens, medium, 558 mycoplasmas, survival in aerosols, 143 mycotoxicosis, tobacco brown spot, 1596 myxin, agent in Trichophyton mentagrophytes infec-

tion, 817 myxobacteria, from freshwater fish, 1901 myxobacteria, isolation and enumeration, 795

naphthalene, formation of salicylate from, 172 neomycin, effect on growth of rumen bacteria, 1255 neomycin inactivation by enzymes of *Pseudomonas* aeruginosa, 1276

Nephelostat, continuous-culture device, 1375 neutralization of respiratory synctial virus, effect of complement on, 1076

niacin in seawater, 366 nitrate-induced germination of putrefactive anaerobe 3679h spores, 412

nitrification of activated sludge, 62

nitrogen-deficient medium, isolation of Klebsiella and Enterobacter on, 896

nitrogen-deficient waste water, assimilation of acetic acid in, 1358

nitrogen-deficient waste water, regeneration of oxidative assimilation, 1352

Nocardia, cell yields on *n*-octadecane and pristine, 1886 nodule bacteria, manganese oxide reduction by, 695 nonfermentative bacilli, man associated, 1631

nonheme iron protein in *Clostridium botulinum*, 207 nonsporeforming anaerobe, for testing Fluid Thioglycollate Medium, 1102

NSC 9369, antimicrobial evaluation of, 1879

5'-nuclease, production by Aspergillus quercinus, 1293 nuclease-forming 5'-nucleotide, in low-phosphate medium, 1293

numerical taxonomy, catalase-negative cocci in frozen vegetables, 1024

nystatin resistance in yeast, mutation for, 164

odorous substance produced by Streptomyces griseoluteus. 178

oncogenic simian adenoviruses, tumor specific antigens for, 1015

organ homogenates, technique for plating, 1610 outgrowth, effect of Veronal, 801

oxidative assimilation, regeneration in sludge treatment, 1352

oxidative assimilation of acetic acid, in waste-water treatment, 1358

oxygen, toxicity for microorganisms, 476

Pacific hake (Merluccius productus), microbial flora of, 1937

parabarosis, effect on interferon production in mice, 1551

parainfluenza 2 virus, growth pattern, 1265

parainfluenza 2 virus hemagglutinin, enhancement, 1265

parainfluenza virus vaccine as immunogen, 1207 Pasteurella pestis, identification, 1114

Pasteurella pestis, identification on antiserum-agar plates, 649

Pasteurella tularensis, effect of altitude on mice infected with, 1451

Pasteurella tularensis, growth and metabolism, 855

pathogens, enteric, medium for, 577, 579 peanut kernels, aflatoxin accumulation in, 1230

peanut kernels, aflatoxin accumulation in, 1230 peanuts, aflatoxin assays of, 946

penicillin, improving reliability of assay, 1941 penicillin acylase of *Fusarium*, 1557

penicillin acylase of *Penicillium chrysogenum*, 1557 penicillin-resistant variants of pneumococci, 311

penicillin-resistant variants of pneumococci, 311 penicillinase, interaction with penicillanic acid, 228

penicillinase-producing staphylococci, test for, 1261 Penicillium, aflatoxin production by, assay, 1053

Penicillium, waste mycelium in animal diet, 1723 Penicillium chrysogenum, penicillin acylase of, 1557

Penicillium lilacinum, effect of environment, 114 Penicillium rubrum, extraction of rubratoxin B, 1163

Penicillium sp., aflatoxin production by, 1945 peracetic acid vapor, sporicidal effect, 1782

perch fillets, storage life of, 242 periodate, inhibition of influenza virus hemagglutina-

tion by, 563
phagicin, isolation from λ-infected Escherichia coli, 827

pharmaceuticals, nonsterile, microbial content, 1919, 1924

pharmacology of cephallgolycin, 1006

phenazine pigments, synthesis by *Pseudomonas* sp., 753

phenol-treated *Escherichia coli*, viability of, 239 phenolic metabolites, synthesis by *Pseudomonas* sp.,

phenolphthalein diphosphate agar with polymyxin, 535

phosphatase, production by Aspergillus awamori, 973 phosphate, effect on phosphatase production by Aspergillus awamori, 973

phosphate compounds, preservative effects on cherries,

phosphorus-containing antibiotic, prasinomycin, 603 photobacteria, method for mass culture, 954

photocell-controlled continuous-culture device, 1375 photodynamic antiviral substance, from *Chlorella* ellipsoidae, 1809

phosphatase activity in *Streptococcus faecalis*, 1543 phosphatase activity in *Streptococcus faecium*, 1543 photomicrography, aerobic slide culture for, 439 phytase-producing microorganisms, 1348

phytopathogenic fungi, strains of Cochliobolus carbonum, 1719

picornavirus, survival of, 1811

pigment fractions, separation from Serratia marcescens, 13 placenta, fibroblastic tissue cultures, 1623
plant species, unpalatable, essential oils from, 39
plants, lactobacilli on, 1326
plaque assay of influenza virus, 588
plaque formation by rhinovirus serotypes, 1445
plaque neutralization test for yellow fever virus, 1770
plate counting, stereoscopic microscope pattern
method, 1795

plate-dilution frequency technique, assay of microbial ecology, 330

plate method, screening chrondroitin sulfatase activity, 1434

plating technique, for pathogenic fungi from organs, 1610

pneumococci, penicillin-resistant variants of, 311 polluted water, cellulolytic *Cellvibrio* from, 1424 polymer system, for Junin virus purification, 1602 polymers, drag-reducing, effect of pH, 1253 polymethacrylic acid, effect on vaccinia virus-infected mice, 1314

polyols in presence of fructose, estimation of, 1807 polysaccharide synthesis by rumen organisms, 1672 polyurethane foam, effect on microbial growth in fuelwater system, 426

polyurethane foam, effects of jet-fuel microbial isolates on, 1826

polyvalent H method screening feed components for

polyvalent H method, screening feed components for Salmonella by, 1872

porphyrins, removal from diphtheria toxoid, 528 potatoes, frozen, storage of, 759 poultry, fresh eviscerated, radurization of, 1061

prasinomycin, characterization, 603 preservation of *Claviceps paspali*, nonsporulating, 1100

preserving meat, by radiation, 1061 production of highly labeled adenoviruses, 1245 L-proline, production by *Kurthia catenaforma*, 1200 β-propiolactone vapor, sporicidal activity of, 641 protease production by *Entomophthora*, 450 protein, iron-bound, in *Clostridium botulinum*, 207

protein, normal diet, Penicillium mycelium as, 1723 proteinase production by Cephalosporium, 90 proteinases of Aspergillus oryzae, extracellular, 1799 proteinases of yeasts and yeastlike fungi, 1370 proteinase-yielding Cephalosporium, 1598

Proteus, biochemical variations of, 881
Proteus, lactose-fermenting strains, incidence, 881
Proteus morganii, ampicillin-cloxacillin against, 1507
Proteus swarming, inhibition by nucleic acid products,

prunes, spoilage fungi of, 1853 pseudomonads, growth on mixed media, 1337 pseudomonads pathogenic for man, diagnostic criteria, 1497

Pseudomonas, carbenicillin activity against, 1753
Pseudomonas, cell yields on n-octadecane and pristine,
1886

Pseudomonas, differentiation of species, 1532
Pseudomonas, isoamylase formation by, 1439
Pseudomonas, in deterioration of rockfish, 1320
Pseudomonas aeruginosa, antibiotic-inactivating enzymes from, 1276

Pseudomonas aeruginosa, differentiation from other pseudomonads, 1532

Pseudomonas aeruginosa, effect of hyperoxia on, 260 Pseudomonas aeruginosa, salicylate formation by, 172 Pseudomonas aeruginosa, partial idenitfication, 1631 Pseudomonas aureofaciens, metabolism of tryptophans, 753

Pseudomonas maltophilia, partial identification, 1631 Pseudomonas putrefaciens, on fishery products, 1734, 1738

psittacosis organism, partial purification, 166 psychrophilic bacteria, recovery of, 1794

putrefactive anaerobe 3679h, effect of meat-curing agents, 406

putrefactive anaerobe 3679h spores, germination of, 412

putrescine, enhancement of mengovirus nucleic acid infectivity by, 1257 pyrophosphotransferase, amprolium and thiamine,

961 pyrrolnitrin, production by *Pseudomonas* sp., 753

quaternary ammonium compounds, disinfection with,

rabbits, apparatus for exsanguination of, 1952 radiation resistance of microorganisms in food products, 1300

radurization, fresh eviscerated poultry, 1061 reading device for gel-diffusion assays, 793

reagent-impregnated paper strips, for distinguishing Escherichia from Aerobacter, 1460

reagent tablets, for identification of salmonellae, 1629 recovery of heat-injured *Streptococcus faecalis*, 1764 red blood cell type, effect on antistreptolysin O titer, 1761

1761 reference enteroviruses, production of, 1575 regenerative life-support system, use of *Hydrogeno-*

monas eutropha, 822 rendered products, contamination in, 1002 rennin crystal from Mucor pusillus, 1727 rennin enzyme of Endothia parasitica, 248 replica plates, device for comparison, 956 replicating apparatus, improved, 151

replication of mammalian cells, method to study variables, 841 respiratory chain of *Streptomyces antibioticus*, 29

respiratory chain of *Streptomyces antibioticus*, 29 respiratory synctial virus, neutralized by complement, 1076

retting of flax, effect of storage on, 1942 rhinovirus serotypes, plaque formation by, 1445 rhinoviruses, methylcellulose assay of, 1331

Rhizobium japonicum, antigens associated with serotype of, 203

Rhizobium japonicum, extracellular material from, 155 rockfish, microbial deterioration of, 1320

Rodac plates, method for pouring, 1427 rodent cage, new type, 762

roll tubes, simple apparatus for, 1417

rose bengal-malt extract agar, isolating organisms from soil, 170

route of inoculation, effect on antibody formation, 1207

rubella hemagglutinating antigen, production, 803 rubella hemagglutination test, diluent for, 691 rubella hemagglutinin, morphology, 437

rubella hemagglutinin, stability of, 423 rubella virus, effect of sodium deoxycholate on, 1624 rubella virus, growth in presence of serum substitutes,

rubella virus hemagglutinating antigen, 154 rubratoxin B, bioproduction and purification, 1163 rumen, microbial growth in, 1672 rumen bacteria, degradation of hemicellulose, 781 rumen bacteria, effect of antibiotics on growth, 1255 rumen bacteria, effect of oils of Artemisia on, 441 rumen bacteria, fatty acid composition, 1406 rumen bacteria, identification, 1406 rumen bacteria, lysis in bovine rumen fluid, 714 rumen ciliate, Entodinium simplex, agnototiotic, 1044 rumen content, microbial growth in, 1124 rumen microbial inhibition, essential oils, 39 rumen organisms fermenting carbohydrates, 1672 rumen production of CH4, inhibition by CCl4, 1955 ruminal bacteria, antibiotic susceptibility of, 301 ruminal ingesta, lactate metabolism by, 680

safety cabinet, containment of microbial aerosols, 1225 safety cabinets, evaluation, 1478 safety evaluation of industrial refuse incinerator, 291 safety system, use of microscope in, 659 salicylate formation from naphthalene by *Pseudomonas aeruginosa*, 172

saliva, indigenous flora from, 428

salmon, incidence of *Clostridium botulinum* type E in,

Salmonella, detection by single-culture technique,

Salmonella, effect of water activity on heat resistance of, 1621

Salmonella braenderup, bacteriophage typing for, 1708

Salmonella screening feed components for, 1872
Salmonella senftenberg 777W, heat resistance in milk chocolate, 1939

Salmonella typhimurium, in egg white foam products, 1929

Salmonella typhimurium, in milk chocolate, 1939 Salmonella typhimurium, in cheddar cheese, 862 salmonellae, effect of cocoa on, 424

salmonellae, in dry milk, 998 salmonellae, biochemical identification, 1629

salmonellae, plothermical identification, 1029
salmonellae, plating efficiency on Brilliant Green
Agar, 746

salmonellae, susceptibility to cephalosporins, 1570 salmonellae, susceptibility to antimicrobial agents, 1570

salmonellae associated with turkey products, 1 salts, effect on recovery of *Streptococcus faecalis*, 772 sample collector for continuous culture, 1381 sanitizing technique, for hemodialysis tank, 1259 seawater, elimination of *Enterobacteriaceae* from, 1616 seawater, vitamins in, 366 sediments, estuarine, *Vibrio parahemolyticus* from, 543 semisynthetic penicillin, carbenicillin, 1753

sensitivity discs, effect of humidity on, 656 serological methods for assay of staphylococcal enterotoxin, 1019

Serratia, differentiating from Klebsiella and Enterobacter, 1548 Serratia marcescens, lyophilization, 1081 Serratia marcescens, separation of pigment fractions from, 13

Serratia marcescens aerosols, 1146

serum-blocking, for measuring influenza virus infectivity, 1699

serum hemolytic complement, measuring, 1635 serum substitute in media for *Leptospira*, 534

serum substitutes, growth of rubella virus in presence of, 430

sewage, treated, Sphaerotilus in, 942

sewage fungus, ecology of, 1191

sewage loading, effect on prevalence of Sphaerotilus, 942

sewage microorganisms, metabolism of detergents by, 48

shellfish, viral depuration by individual assay, 1865 shaker-culture, for cultivation of mammalian cells,

Shigella, freeze-drying of various strains, 1779 shigellae, isolation of, 1383, 1387 simian adenoviruses, tumor-specific antigens for, 1015 slide culture for photomicrography, 439 slime molds, demonstration of cellulose in, 106 sludge, activated, bacterial enumeration, 1790 sludge fermentation, microbiology of, 358 sludge nitrification with benzene sulfonates, 62 sludge treatment, oxidative assimilation in, 1352 smallpox vaccines, potency assay of, 458 sodium chloride, tolerance of streptomycetes, 1134 sodium deoxycholate, effect on rubella virus, 1624 sodium hypochlorite, at subzero temperatures, 787 sodium polyanethol sulfate, for transport of blood,

soil, detection of bacteria in, 932

soil organisms, production of trans-cinnamic acid by, 320

spacecraft, sterilization of, 735

specimen preparation, by linear gradient dehydration, 812

spent sulfite liquor, effect on Sphaerotilus natans, 276 Sphaerotilus, attached growth in continuous-flow apparatus, 1191

Sphaerotilus, calcium nutrition of, 1364

Sphaerotilus, in treated sewage, 942 Sphaerotilus natans, growth in continuous-flow ap-

paratus, 276

Spirillum sp., selective isolation, 1947
spoilage bacteria in canned food, 45
spoilage flora of prunes, 1853

sporangium, of *Bacillus thuringiensis*, 1098 spore germination, inhibition by Veronal, 801 spore moisture, in resistance of *Bacillus subtilis*, 735

spores, Bacillus subtilis, inactivation of, 810 spores, Clostridium botulinum type E, in smoked fish,

spores, destruction by incineration, 490 spores, direct counts of, 436

spores, dry-heat destruction of, 343

spores, effect of meat-curing agents on, 406 spores, fungal, transformation of steroids, by, 393 spores, nitrate-induced germination, 412

spores, resistance to dry heat, 1110

spores of Bacillus stearothermophilus, amino acid content of, 960

spores of Bacillus subtilis var. niger, 180 sporicidal action of ascorbic acid for Clostridium, 349

sporicidal activity of β -propiolactone vapor, 641 sporicidal effect of peracetic acid vapor, 1782

sporulation, synchronous, in *Bacillus megaterium*, 963 sporulation of *Clostridium perfringens*, medium for, 82 sporulation of thermophilic anaerobes, inhibitors, of,

spray-fog technique for disinfection, 223 spray technique for microbial sampling, 1935 sputum, isolation of mycobacteria from, 506 stability of influenza virus, 835

staining, with malachite green, 792

staining bacteria on membrane filters, 433

standardized complement fixation procedure, 1635 staphylocoagulase assay, dye-diffusion test for, 1608 staphylococcal enterotoxin, heat inactivation of, 308 staphylococcal enterotoxin, rapid assay, 1019 staphylococcal enterotoxin B, lethal shock after, 187 staphylococcal infections in mice, homocarnosine

against, 1457 staphylococcal penicillinase, interaction with penicil-

lanic acid, 228 staphylococci, coagulase-negative, susceptibility to lysostaphin, 1168

staphylococci, coagulase-positive, from foods, 535 staphylococci, coagulase-positive, resistance to hydro-

gen peroxide, 267 staphylococci, confusion of aerococci with, 519

staphylococci, penicillinase-producing, 1261 staphylococci, potentially pathogenic strains, 1745 staphylococci, production of enterotoxin in milk by,

917 staphylococci, responses to androgens, 1512 Staphylococcus albus, pathogenic strains, 1745 Staphylococcus aureus, inactivation of kanamycin,

1282
Staphylococcus aureus, lincomycin against, 1663
Staphylococcus aureus, methicillin-resistant strains, 1174

Staphylococcus aureus, phosphorylation of kanamycin, 1282

Staphylococcus aureus, response to androgens, 1512
Staphylococcus aureus, susceptibility of Swiss albinomice, 815

starch hydrolysis, by Aspergillus wentii conidia, 1678 statistical methods, estimating radiation resistance,

statolon, effect against mengovirus in mice, 468 statolon-induced interferon, effect on antibody formation, 1040

stereoscopic microscope pattern method, 1795 sterility test medium, thioglycolate broth, 1742 sterility testing, in industrial laboratories, 1156 sterilization by use of dry heat, 343 sterilization of bacterial aerosols, incinerator for, 490 sterilization of water by heat, 609

sterilization of water by heat, 609 steroids, transformation by fungal spores, 393 storage, long-term, of *Claviceps paspali*, 1100 storage of standard inoculum, in liquid nitrogen, 912 streptococcal M-typing antisera, response in rabbits,

1822

streptococcal vaccination, 509

streptococci, confusion of aerococci with, 519 streptococcus, β -hemolytic, continuous culture of, 73 Streptococcus bovis, lysis in rumen fluid, 714

Streptococcus faecalis, arginine dihydrolase, 1543 Streptococcus faecalis, heat-injured, 772

Streptococcus faecalis, thermal injury and recovery, 1764

Streptococcus faecium, arginine dihydrolase, 1543 streptococcus M antigens, hemagglutination technique, 1640

streptokinase, production in continuous culture, 73 Streptomyces, salt tolerance of, 1134

Streptomyces antibioticus, respiratory chain of, 29Streptomyces aureofaciens, biochemical chlorination by, 1285

Streptomyces griseoluteus, odorous substance produced by, 178

Streptomyces hydroscopicus, antibiotic produced by, 614

Streptomyces hygroscopicus, carbon repligraphic comparison, 935

Streptomyces tanashiensis, kalofungin produced by, 1815

streptomycin, effect on enterococci in combination with penicillins, 645

streptomycin, effect on enzyme systems of Bacillus subtilis, 1786

streptomycin inactivation by enzymes of *Pseudomonas* aeruginosa, 1276

streptothricin, antibiotic related to, 614

streptovaricin C, effect on mycobacterial infections, 500

substrate removal, film-flow reactor for studying, 1095 sulfate, effect of *Cephalosporium acremonium* metabolism, 1913

sulfonamide, susceptibility test for meningococci to, 1056

susceptibility to Staphylococcus aureus, effect of diet, 815

swarming, *Proteus*, inhibition by nucleic acid products, 1431

synchronized cells, mass culture of, 496 synchronous sporulation, in *Bacillus megaterium*, 963 synergistic antibiotics, activity against *Proteus morganii*, 1507

T antigens, for oncogenic simian adenoviruses, 1015 taxonomic criteria for marine bacteria, 708

taxonomy by carbon replication, 935 taxonomy of Streptomyces, 1134

Teflon film, *Bacillus subtilis* spores on, 1841

temperature, effect on aflatoxin production, 988 temperature, effect on biochemical chlorination, 1285 temperature, effect on *Escherichia coli*, 1394

temperature, effect on Escherichia coli, 1394
testing standards, for nonsterile pharmaceuticals, 1919
tetanus toxin, production in continuous culture, 69
tetrazolium salt, relation of reduction to yeast growth,
236

thermal energy interchange, during anaerobic digestion, 1518

thermal inactivation of Bacillus subtilis var. niger spores, 1240

thermal inactivation of vegetative bacteria, 991

thermal injury and recovery of Streptococcus faecalis, 1764
thiamine, removal from culture media, 530
thiamine in seawater, 366
thiamine pyrophosphotransferase, 961
thioglycolate broth, as sterility test medium, 1742
throat, hemolytic Haemophilus from, 256
tobacco, flue-cured, fungi in, 851
tissue culture, laminar airflow systems for, 1804

tissue culture test for toxigenicity, 1748 tobacco brown spot, toxicity to chicks, 1596 tobacco leaves, fungi isolated from, 1309

tomato juice, effect on growth of lactobacilli in milk,

1215, 1220 tomato products, fungal metabolites as indicators of quality, 948

Torulopsis ernobii, production of lipase by, 845
Torulopsis strains, D-mannitol production by, 1847
toxicity, loss of, in Bordetella pertussis, 1211
toxigenicity test for Corynebacterium diphtheriae, 1748
toxin, Clostridium botulinum type F in Argentina, 732
toxin, Clostridium tetani, continuous production of, 69
toxin, mouse-lethal, in cultures of Bordetella pertussis,

toxin production in food, detection of, 102 toxins, botulinal, detection by immunodiffusion, 21 trace elements, effect on production of versicolin, 1429 trans-cinnamic acid, production by soil organisms, 320 transglucosyl-amylase of Candida tropicalis, 216 Trichophyton, antibiotic active against, 340 Trichophyton schoenleinii, effect of environment on propoleogy, 114

morphology, 114
trypacidin, in cultures of Aspergillus fumigatus, 1251
trypsinization of placenta, 1623
tryptophans, metabolism by Pseudomonas sp., 753
turbidimetric assay, antibiotics, 777
turbidimetric device for measuring cell concentrations, 212

turkey products, salmonellae associated with, 1

ultrasound, effect on bacterial counts in milk, 470 ultraviolet irradiation of ice, 463

vaccination, streptococcal, 509 vaccine production, by *Pasteurella tularensis*, 855 vaccinia virus-infected mice, effect of interferon, 1314 vaccines, quantitative M protein determination for, 122

vaccines, smallpox, potency assay of, 458 vaccinia virus, biologically active compounds against,

vaccinia virus, sensitivity to deoxyribonucleic acid inhibitors, 1151

vancomycin, effect on growth of rumen bacteria, 1255 vapor-phase disinfectant, effect of cell moisture on, 641 varicella antiserum, production of, 160 Venezuelan encephalitis virus, plaquing, 808 Veronal, inhibition of colony formation, 801

Veronal buffer, inactivation of staphylococcal enterotoxin in, 308 versicolin, effect of trace elements on fermentation, 1429 versicolin, new antifungal antibiotic, 749 viable cell counts, microtites technique for 1026

viable-cell counts, microtiter technique for, 1036 Vibrio, marine, taxonomic criteria for, 708

Vibrio parahemolyticus, organisms from estuarine sediments, 543 viral depuration of shellfish, by individual assay, 1865

viral nucleic acid, enhancement of infectivity, 1257 virucidal effects of dimethyl sulfoxide, 1625 virus, food-borne, detection, 595

virus, influenza, assay in canine kidney cells, 588 virus, influenza, preservation, 362 virus, influenza, stability after drying, 835

virus, mengovirus, effect of statolon against, 468 virus, rubella, growth in presence of serum substitutes, 430

virus, rubella, hemagglutinating antigen of, 154 virus, rubella, hemagglutination test, 691 virus, varicella, specific immune serum, 160 virus, Venezuelan encephalitis, medium for plaquing,

virus, yellow fever, aerosol stability of, 263 virus, yellow fever, inactivation by glutaraldehyde, 177 virus hemagglutination, inhibitor of, 563 virus removal from air, commercial filter for, 1465 viruses, deoxyribonucleic acid, phagicin against, 827 vitamin B₁₂ assay microorganisms, variations, 1831 vitamins in seawater, 366 volatile oils of *Artemista*, antibacterial action of, 441

waste organic substrates, thermal energy interchange, 1518

waste-water, oxidative assimilation of acetic acid, 1358

wastes, effectiveness of incineration of, 291 water, growth of *Sphaerotilus natans* in, 276 water, heat sterilization of, 609 water activity, effect on heat resistance of *Salmonella*, 1621

wine, secondary fermentation, prevention, 1067 wood, bacterial decay in copper-chrome-arsenictreated, 1599

Xeromyces bisporus, spoilage fungi of prunes, 1853 xylan, degradation and solubilization of, 781

yeast, mutation for mystatin resistance in, 164 yeast extract, effect on heat-treated *Escherichia coli*, 335

yeast-phase growth of *Histoplasma capsulatum*, 236 yeast stabilization, in sweet wine, 1067 yeasts, extracellular proteinases of, 1370 yeasts, production of D-mannitol and glucose by, 1847 yeasts, routine identification, 1503 yellow fever virus, aerosol stability of, 263 yellow fever virus, inactivation by glutaraldehyde, 177 yellow fever virus, plaque neutralization test, 1770

zeolite, synthetic, disruption of bacterial cells by, 1269